Abstract of the Disclosure

A control system is disclosed for controlling data flow over a data-packet-network according to specific destinations. The system has a network monitoring system for monitoring network performance parameters; a network access system for accessing specific nodes in the network; and a control software executable on the network access system for assigning and changing cost parameters at selected nodes in the network. A network administrator uses the network access system and control software to assign and implement cost values at the selected nodes, the values associated individually with a specific destination or destinations, the values establishing forwarding costs to be incurred at the selected nodes, and link costs to be incurred per data link between the nodes such that manipulation of such cost value assignments enables load balancing of data traveling through the network. In one embodiment the data-packet-network is internal to a router and nodes comprise internal router cards.